

**ACADEMIC SENATE**

**Committee on Academic Planning and Review**

**ANNUAL PROGRAM REPORT**

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| College | College of Science |
| Department | Computer Science |
| Program  | Bachelor’s Computer Science |
| Reporting for Academic Year | 2017-2018 |
| Last 5-Year Review | 2017-2018 |
| Next 5-Year Review | 2022-2023 |
| Department Chair | Dr. Matt Johnson |
| Date Submitted | 6/12/2018 |

# SELF-STUDY *(suggested length of 1-3 pages)*

# SUMMARY OF ASSESSMENT *(suggested length of 1-2 pages)*

## Program Learning Outcomes (PLO)

*List all your PLO in this box. Indicate for each PLO its alignment with one or more institutional learning outcomes (ILO). For example: “PLO 1. Apply advanced computer science theory to computation problems (ILO 2 & 6).”*

Students graduating with a Bachelor of Science in Computer Science will be able to:

1. apply knowledge of mathematics and computational theory to appropriate problems in computer science (ILO 2 & 6)
2. analyze a problem, and identify and define the resources and requirements needed for its solution (ILO 1)
3. design and implement a program to meet stated needs (ILO 6)
4. develop and maintain computer-based systems, processes, and platforms (ILO 1 & 6)
5. recognize and distinguish the mechanisms, components and architecture of computing systems (ILO1 & 6)
6. employ current techniques, skills, and tools necessary for computing practice (ILO 1 & 2)
7. identify professional, ethical, legal, and security issues and responsibilities and the impact of computing on individuals, organizations, and society (ILO5)
8. perform successfully on teams to accomplish a common goal, and communicate effectively in written and oral form (ILO 4)

## Program Learning Outcome(S) Assessed*List the PLO(s) assessed. Provide a brief background on your program’s history of assessing the PLO(s) (e.g., annually, first time, part of other assessments, etc.)*

We have evaluated PLO’s 1,2,3, and 4 in the past four years. This year we evaluate PLO 5.

## Summary of Assessment Process

*Summarize your assessment process briefly using the following sub-headings.*

**Instrument(s):** *(include if new or old instrument, how developed, description of content)*

We continue to use our Blackboard Assessment Quizzes to conduct our assessments. These contain 10 multiple choice questions which address the PLO being evaluated. Students take this quiz at the end of the quarter.

**Sampling Procedure:**

All students in the assessed course complete an assessment quiz at the end of the quarter. The assessment results are not part of the student’s grade for the course.

 **Sample Characteristics:**

We evaluate the percentage of correct/incorrect answers for each assessment quiz or questions depending on if the quiz addresses one or more PLO.

 **Data Collection:** *(include when, who, and how collected)*

Instructor gathers results from their Blackboard course shell and sends them to the undergraduate assessment coordinator, Leann Christianson.

**Data Analysis:**

Assessment coordinator compiles the results in tabular form. Noting areas where improvements are needed and reviewing the quiz content for relevancy.

## Summary of Assessment Results *Summarize your assessment results briefly using the following sub-headings.*

This year we are assessing PLO 5: “ Recognize and distinguish the mechanisms, components and architecture of computing systems (ILO1 & 6)

This PLO is addressed in the following courses: CS 2340 Assembly Language (I), CS 3430 Computer Architecture (D), CS 3560 Systems programming (D), CS 3590 Data Communications (D), CS 4521 Mobile and Topics in Web Programming (M), CS 4525 Network Security (M), CS 4526 Principles of Wireless Security (M), CS 4560 Operating Systems (M), CS 4590 Computer Networks (M), CS 4592 Network Administration (M), and CS 4594 Broadband Networks (M)

Of these the following were not offered during the 2017-2018 academic year: CS 4526 Principles of Wireless Security (M), CS 4592 Network Administration (M), and CS 4594 Broadband Networks (M)

Assessment Data was available for the following courses: CS 2340 Assembly Language, CS 3430 Architecture, CS 4560 Operating Systems, and CS 4590 Computer Networks.

**Main Findings:**

**Results for Spring 2018**

CS 2340 Assembly Language 32% 🡨work needed here

CS 3430 Architecture 55% 🡨 work needed here

CS 4525 88%

4560 Operating Systems 95%

**CS 4590 Computer Networks - Questions 1,2,6,8,9 addressed PLO 5**

Q1 73%

Q2 67%

Q6 87%

Q8 87%

Q9 33%

 **Recommendations for Program Improvement:** *(changes in course content, course sequence, student advising)*

It is clear from the results above that we need to address the content in CS 2340 Computer Organization and Assembly language and CS 3240 Computer Architecture as well as CS 4590 Computer Networks. All of these courses have been redesigned for Fall 2018. In addition, we new program learning outcomes and standardized assessment quizzes were created. Detailed course outlines have also been written to insure consistency across courses. With our new curriculum and assessments, we hope that outcomes will improve.

 **Next Step(s) for Closing the Loop:**  *(recommendations to address findings, how & when)*

As mentioned previously, the courses above have been redesigned for semesters. New Program Learning Outcomes were approved, and new assessment quizzes for all courses have been developed to standardize the process. We expect that standardization will help to address deficiencies.

**Other Reflections:**

Currently, we do not have standardized assessments so consistency and validation is an issue. In addition, lecturers and faculty outside our department are not always aware of the importance of assessment and do not always take the time to conduct assessments. We have created a standard repository for the assessment quizzes for easier deployment in the future, and we will communicate more thoroughly the need to follow through with the assessment process.

## Assessment Plans for Next Year

*Summarize your assessment plans for the next year, including the PLO(s) you plan to assess, any revisions to the program assessment plan presented in your last five-year plan self-study, and any other relevant information.*

1. Next year we will assess our new PLO 1. “Apply knowledge of mathematics and computational theory to analyze problems in computer science, and identify and define the resources and requirements needed for their solution.”

 It will be our first run of our new process, and we hope it will be successful and allow easier evaluation for program improvements.